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10/550,896	09/27/2006	Hisashi Miyamori	4035-0175PUS1	1709
2292	7590	10/01/2007	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			NEWMAN, MICHAEL A	
PO BOX 747				
FALLS CHURCH, VA 22040-0747			ART UNIT	PAPER NUMBER
			2624	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/550,896	MIYAMORI, HISASHI	
	Examiner	Art Unit	
	Michael A. Newman	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-10 and 12 is/are rejected.
- 7) Claim(s) 11 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 September 2005 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/27/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 6 and 12 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim *should refer to other claims in the alternative only*. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 3, 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - a. Claim 3 recites the limitation "the moving image" in line 3. There is insufficient antecedent basis for this limitation in the claim.
 - b. Claim 4 recites the limitation "the moving image" in line 4. There is insufficient antecedent basis for this limitation in the claim.
 - c. Claim 5 recites the limitation "the moving image" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Katoh et al. (U.S. Patent No. 6,654,495).

a. Regarding claims 1 and 7, Katoh teaches a method and apparatus for eliminating a second line-shaped image object, which overlaps with a first image object in a single image comprising effective or ineffective pixels, from the first image object (**Col. 3 lines 10 – 12**), the apparatus comprising: a line segment extraction means for extracting a line segment from the second line-shaped image object (**Fig. 22 element 4 – Col. 5 lines 50 – 57**); a line-shaped image elimination means for eliminating the second line-shaped image object from the

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first image object (**Fig. 22 element 5 – Col. 5 lines 59 – 64**); an image scan means for scanning a vicinity region of the line segment on the first image object and sequentially extracting pixels to be scanned (**Col. 6 lines 1 – 6 See Col. 9 lines 54 – 59**) [**Note Fig. 12 for the neighborhood/vicinity mask**]; an effective pixel determination means for determining whether or not the extracted pixels to be scanned are effective pixels (**Col. 9 lines 59 – 67**); and a pixel interpolation means for dropping a perpendicular from the pixels to be scanned that are determined to be the effective pixels at the effective pixel determination step to a nearest line segment and setting all the pixels on the perpendicular as the effective pixels (**Col. 6 lines 12 – 18 See Fig. 15(c)**) [**Note that although Katoh does not explicitly name it a perpendicular line, it is clear from Fig. 15c and Fig. 16 that the hatched segment is perpendicular to the removed line segment**].

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 2, 3 and 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh et al. (U.S. Patent No. 6,654,495) in view of Fitzpatrick et al. (U.S. Patent No. 5,262,860). Hereinafter referred to as Katoh and Fitzpatrick respectively.
- a. Regarding claims 2 and 8, Katoh teaches all the limitations of the independent claims 1 and 7, respectively, as set forth in the 102 rejection of claims 1 and 7 above. Katoh clearly teaches processing a single image/frame. However, Katoh **fails to teach** that it is in a moving image comprising a plurality of frames. **Pertaining to the same field of endeavor Fitzpatrick teaches an information retrieval system in which, for a television video broadcast signal being received by a TV, a freeze frame is captured and stored** (Fitzpatrick Col. 4 line 66 to col. 5 line 4). The system determines whether numeric or textual data is present and if so, reads the textual/numeric data using any well known OCR technique (Fitzpatrick Col. 5 lines 42 – 46). **Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply Katoh's simple and fast processing technique (Katoh Col. 11 lines 2 and 3) to remove unwanted lines from Fitzpatrick's video frames in order to enhance the accuracy of the text/numerical information detection.**

b. Regarding claims 3 and 9, Katoh teaches all the limitations of the independent claims 1 and 7, respectively, as set forth in the 102 rejection of claims 1 and 7 above. Furthermore, Katoh teaches a frame arithmetic processing means for subjecting the image to predetermined arithmetic processing and uses a result of the arithmetic processing as the image (**Katoh Col. 5 lines 60 – 61**) [Note that counting, to determine the run-length, is a basic arithmetic operation]. However, Katoh fails to teach a frame extraction means for extracting a single frame or a plurality of frames from a moving image comprising a plurality of frames. Pertaining to the same field of endeavor Fitzpatrick teaches an information retrieval system in which, for a television video broadcast signal being received by a TV, a freeze frame is captured and stored (Fitzpatrick Col. 4 line 66 to col. 5 line 4). The system determines whether numeric or textual data is present and if so, reads the textual/numeric data using any well known OCR technique (Fitzpatrick Col. 5 lines 42 – 46). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to add Fitzpatrick's frame freezer in order to apply Katoh's simple and fast processing technique (Katoh Col. 11 lines 2 and 3) to remove unwanted lines from Fitzpatrick's video frames in order to enhance the accuracy of the text/numerical information detection.

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9. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh et al. (U.S. Patent No. 6,654,495) in view of Fitzpatrick et al. (U.S. Patent No. 5,262,860) as applied to claims 3 and 9, and further in view of Bessho (Japanese Patent Application Publication 11-265422). Hereinafter referred to as Katoh, Fitzpatrick and Bessho respectively.

a. Regarding claims 4 and 10, Katoh in view of Fitzpatrick teaches all the limitations of the dependent claims 3 and 9, respectively, as set forth in the 103 rejection of claims 3 and 9 above. However, Katoh **fails to teach** that the frame arithmetic processing means executes any processing of processing for determining a difference between two arbitrary frames in the moving image and processing for determining a change region in one arbitrary frame in the moving image. **Pertaining to the same field of endeavor, Bessho teaches a system for detecting the presence of new marks on a document by first obtaining a binary image of a document without a user-entered mark (Bessho PP 0013), obtaining a binary image of the document modified by a user (Bessho PP 0015), and subtracting the two to obtain a difference image (Bessho PP 0016). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to detect the difference between two frames, as taught by Bessho, in order to increase processing efficiency by target apply Katoh's line-deletion processing by using a priori knowledge of the base image.**

Allowable Subject Matter

10. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - a. Wang et al. (U.S. Patent No. 7,171,059) teaches a direct interpolation algorithm in which pixels in a direction perpendicular to a determined line direction are interpolated.
 - b. Faroudja et al. (U.S. Patent No. 5,291,280) teaches a motion detection between television signal fields by taking the difference between the currently displayed and the current input as well as between the previous and currently displayed fields.
 - c. Ishikawa et al. (U.S. Patent No. 6,157,737) teaches using the Hough transform to detect straight lines.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Newman whose telephone number is (571) 270-3016. The examiner can normally be reached on Mon - Thurs from 9:30am to 6:30pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir A. Ahmed can be reached on (571)272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M.A.N.

SAMIR AHMED
PRIMARY EXAMINER